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(12) **United States Patent**
Yamazaki et al.

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(54) **METHOD FOR MANUFACTURING RESIST PATTERN AND METHOD FOR MANUFACTURING SEMICONDUCTOR DEVICE**

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See application file for complete search history.

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(57) **ABSTRACT**

To provide a method for manufacturing a resist pattern designed to reduce a manufacturing cost by improving efficiency in the use of a resist material, a method for removing a resist pattern, and a method for manufacturing a semiconductor device.

The present invention includes a step of forming a resist pattern by discharging a composition containing photosensitizer on a object to be processed under reduced pressure. The present invention includes a step of etching the object to be processed using the resist pattern as a mask, a step of irradiating the resist pattern through a photomask with light within a photosensitive wavelength region of a photosensitizer, and a step of removing the resist pattern on the object to be processed.

22 Claims, 16 Drawing Sheets